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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM M. RADICH

Appeal 2009-001468¹
Application 10/607,967
Technology Center 2100

Decided: May 11, 2010

Before JOHN A. JEFFERY, JEAN R. HOMERE, and JAY P. LUCAS,
Administrative Patent Judges.

HOMERE, *Administrative Patent Judge.*

DECISION ON APPEAL

¹ Filed on June 27, 2003. The real party in interest is Seagate Technology, LLC. (App. Br. 1.)

I. STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) (2002) from the Examiner's final rejection of claims 1 through 20. We have jurisdiction under 35 U.S.C. § 6(b) (2008).

We affirm.

Appellant's Invention

As shown in Figures 1 through 3, Appellant invented a method for reducing media noise in a read channel of a disc drive. (Spec. 1, ll. 4-6, and 2, ll. 17-27.) In particular, upon receiving variant time signal samples from a read head (110) in the read channel (200), a Viterbi-like detector (210) in the read channel (200) uses transition jitter statistics corresponding to the received time samples to compute branch metric values in such a way to reduce the number of associated parameters to be estimated in the detector (210). (Spec. 4, ll. 14-19, and 6, ll. 18-27.)

Illustrative Claim

Independent claim 1 further illustrates the invention. It reads as follows:

1. A method of determining branch metric values in a detector, the method comprising:

(a) receiving time variant signal samples; and

(b) computing the branch metric values as a function of transition jitter statistics

corresponding to the signal samples.

Prior Art Relied Upon

The Examiner relies on the following prior art as evidence of unpatentability:

Kavcic 6,438,180 B1 Aug. 20, 2002

Rejections on Appeal

The Examiner rejects the claims on appeal as follows:

1. Claims 1, 2, 7, 8, 11, 12, 17, 18, and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kavcic.
2. Claims 3 through 6, 9, 10, 13 through 16, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kavcic.

Appellant's Contentions

Appellant contends that Kavcic teaches computing branch metric values based on noise statistics, as opposed to using transition jitter statistics, as recited in claim 1. (App. Br. 4, Reply Br. 1-2.) According to Appellant, Kavcic's noise statistics uses a Gauss-Markov approximation of channel noise that uses a sampled waveform in the amplitude domain to produce transitions that look like signal amplitude variations, whereas the claimed transition jitter statistics is a component of media noise, and depends upon positions of data transitions. (Reply Br. 1.)

Examiner's Findings

The Examiner finds that Kavcic's detector while reading data from the magnetic medium is likely to pick up some noise (i.e. media noise), which can be reduced by using the transition positions of the data samples being read. (Ans. 9-11.)

II. ISSUE

Has the Appellant shown that the Examiner erred in finding that Kavcic teaches computing branch metric values based on transition jitter statistics, as recited in independent claim 1?

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Kavcic

1. As shown in Figure 1, Kavcic discloses a magnetic recording system (10) having a read head (22) that picks up variations in the magnetic flux stored on a magnetic medium (16). The read head (22) then provides a stream of data retrieved from the medium (16) to a detector circuit (26), which discards noise from the received data. (Col. 3, ll. 21-37.)

2. As shown in Figure 2, the detector circuit (26) applies selected metric functions to the varying time signal samples received from the read head (22) in order to determine branch metric values. (Col. 3, ll. 34-36.) In particular, the detector circuit uses a Viterbi-like detector (30) that feeds delayed signal samples and detector decisions into a noise statistics tracker circuit (34) such that previously generated metric values are fed back into a metric computation update circuit (36). (Col. 3, ll. 46-61.)

3. As depicted in Figure 3, Kavcic discloses that each generated metric value is obtained as a function of the position of each signal sample

transition, which is dependent upon the nature of the media noise in the magnetic medium. (Col. 4, ll. 15-42.)

IV. PRINCIPLES OF LAW

Anticipation

In rejecting claims under 35 U.S.C. § 102, “[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375 (Fed. Cir. 2005) (citation omitted)).

“Anticipation of a patent claim requires a finding that the claim at issue ‘reads on’ a prior art reference.” *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (citation omitted). “In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.” *Id.* (citation omitted).

Obviousness

“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.” *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)) (citation omitted).

V. CLAIM GROUPING

Appellants argue the patentability of claims 1 through 20 as a group. Claim 1 is representative. In accordance with 37 C.F.R. § 41.37(c)(1)(vii), we consider claims 2-20 as standing or falling with claim 1.

VI. ANALYSIS

Anticipation Rejection

Independent claim 1 requires, in relevant part, computing branch metric values as a function of transition jitter statistics corresponding to received time variant signal samples. (App. Br. 7, Claims App'x.)

We first consider the scope and meaning of the expression “transition jitter” which must be given the broadest reasonable interpretation consistent with Appellant’s disclosure, as explained in *In re Morris*, 127 F.3d 1048 (Fed. Cir. 1997):

[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.

Id. at 1054. *See also In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989) (stating that “claims must be interpreted as broadly as their terms reasonably allow.”). Appellant’s Specification states that “*Transition jitter* is a relatively dominant component of media noise and is dependent upon positions of data transition.” (Spec. 18, ll. 26-27) (emphasis added.)

Our reviewing court further states, “the ‘ordinary meaning’ of a claim term is its meaning to the ordinary artisan after reading the entire patent.”

Phillips v. AWH Corp., 415 F.3d 1303, 1321 (Fed. Cir. 2005).

As noted above, the Specification explicitly defines the expression “transition jitter” as claimed. Consistent with this definition, we broadly but reasonably construe the disputed claim limitation in this appeal as computing branch metric values using statistics information pertaining to noise in the recording medium (media noise), wherein the statistics information is further indicative of the transition position of each sample read from the recording medium.

As set forth in the Findings of Fact section, *supra.*, Kavcic discloses a Viterbi-like detector circuit that, upon receiving variant signal data including media noise from a magnetic medium, computes branch metric values using a noise statistic tracker circuit and a metric computation update circuit. (FF 2.) Further, Kavcic discloses that each branch metric value is obtained as a function of the transition position of each received varying signal sample, and is dependent from the media noise included in the signal. (FF. 3.) Consistent with our interpretation above, we find that Kavcic’s computation of the branch metric values is achieved based on jitter transition statistics. It follows that Appellant has not shown that the Examiner erred in finding that Kavcic anticipates claim 1.

Obviousness Rejection

Appellant reiterates the same arguments argument offered against the anticipation rejection to rebut the obviousness rejection of claims 3-6, 9, 10,

13-16, and 19. (App. Br. 5-6.) We have already addressed those arguments in our discussion of claim 1 above, and we found them unpersuasive. Consequently, Appellant has not shown error in the Examiner's conclusion that claims 3 through 6, 9, 10, 13 through 16, and 19 are unpatentable over Kavcic.

VII. CONCLUSIONS OF LAW

1. Appellant has not established that the Examiner erred in rejecting claims 1, 2, 7, 8, 11, 12, 17, 18, and 20 as being anticipated by Kavcic under 35 U.S.C. § 102(b).
2. Appellant has not established that the Examiner erred in rejecting claims 3 through 6, 9, 10, 13 through 16, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Kavcic.

VIII. DECISION

We affirm the Examiner's rejection of claims 1 through 20.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2009).

AFFIRMED

Nhl

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Application 10/607,967

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